

INVENTIVE CLAIMS

I claim:

1. A method to determine the angular orientation between two surfaces using:
 - A. a first frame that is aligned to one of said two surfaces, and
 - B. a second frame that is aligned to the other of said two surfaces, and
 - C. at least two measuring points are defined on said first frame at a known distance apart, and
 - D. a line connecting said at least two measuring points on said first frame is aligned parallel with said first surface, and
 - E. at least two measuring points are defined on said second frame at the same said known distance apart, and
 - F. a line connecting said at least two measuring points on said second frame is aligned parallel with said second surface, and
 - G. said at least two measuring points on said first frame and said at least two measuring points on said second frame are approximately in the same plane, and
 - H. the positions of said at least two measuring points on said first frame are measured relative to the positions of said at least two measuring points on said second frame,whereby said angular orientation between said two surfaces is determined in said plane.
2. The method according to claim 1 where the non-parallel orientation between the two surfaces is determined in said plane.
3. The method according to claim 1 where the relative offset distance between the two surfaces is determined in said plane.
4. The method according to claim 1 where the angular orientation of the two surfaces is referenced to a line connecting one said measuring point on said first frame and one said measuring point on said second frame.
5. The method according to claim 1 where the angular orientation of the two surfaces is referenced to a line connecting two said measuring points on said first frame or two said measuring points on said second frame.
6. The method according to claim 1 where at least one of said relative position measurements is measured by using the change in length of a string under tension.
7. The method according to claim 1 where at least one of said relative position measurements is measured by using a rigid member with an attached length measuring device.

8. The method according to claim 1 where said two surfaces are the radial surfaces of a roll.
9. The method according to claim 1 where said at least two measuring points on said first frame and said at least two measuring points on said second frame are represented by small geometric shapes.
10. The method according to claim 7 where the length of said rigid member is adjustable.
11. The method according to claim 8 where a rigid member is attached to said first frame and said second frame in a manner to prevent rotation of said rolls.
12. The method according to claim 9 where said small geometric shapes are sections of a sphere.
13. The method according to claim 12 where the length measuring instrument that measures the relative positions between said sections of a sphere incorporates ends that are counter-bored.